Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	4 FEB 2026
Team ID	LTVIP2026TMIDS87433
Project Name	Rain Prediction Pipeline Flask
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Rainfall Prediction Pipeline using Machine Learning and Flask

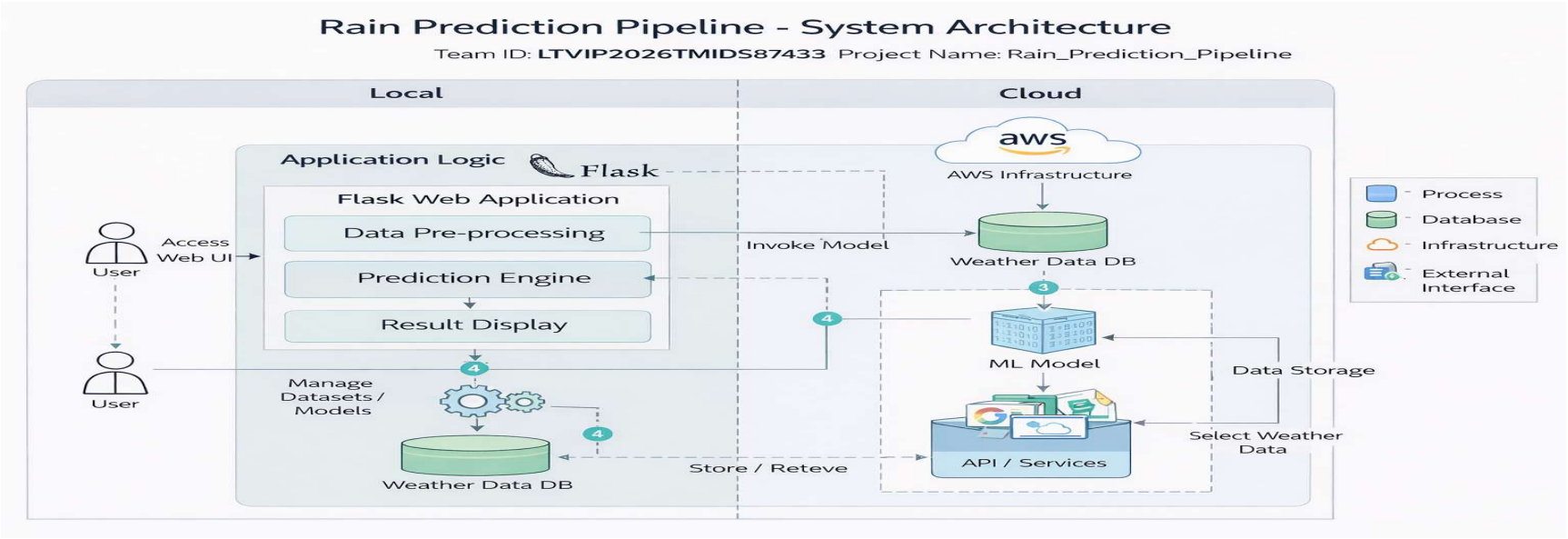

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web interface for entering weather parameters and viewing prediction results	HTML, CSS, JavaScript
2.	Application Logic-1	Handles user requests and routes in Flask	Python,Flask
3.	Application Logic-2	Data preprocessing (cleaning, feature selection)	Python, Pandas, NumPy
4.	Application Logic-3	ML prediction logic	Scikit-learn
5.	Database	Stores weather inputs and prediction results	SQLite / CSV
6.	Cloud Database	Cloud storage for datasets and predictions	AWS S3 / MongoDB Atlas (optional)
7.	File Storage	Stores trained ML model and datasets	Local File System
8.	External API-1	Optional weather data source	OpenWeather API
9.	External API-2	Not used	-----
10.	Machine Learning Model	Predicts rainfall based on input parameters	Random Forest / Logistic Regression
11.	Infrastructure (Server)	Application hosting and execution	Localhost

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks and libraries used in project	Flask, Pandas, NumPy, Scikit-learn
2.	Security Implementations	Input validation and basic application security	Flask validation, HTTPS (deployment), Password hashing (optional)
3.	Scalable Architecture	Follows 3-tier architecture (UI, Application Logic, ML Model)	Flask + ML Pipeline

S.No	Characteristics	Description	Technology
4.	Availability	Application available while server is running	Localhost
5.	Performance	Fast prediction due to lightweight ML model and Flask backend	Python, Scikit-learn